

L Number	Hits	Search Text	DB	Time stamp
1	85	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor	USPAT; US-PGPUB	2002/12/30 17:44
2	30	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and current adj collector	USPAT; US-PGPUB	2002/12/30 17:45
3	36	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and active and conductive and (gradient or density)	USPAT; US-PGPUB	2002/12/30 17:46
4	15	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and active and conductive and (gradient or density) and current adj collector	USPAT; US-PGPUB	2002/12/30 17:46
5	12	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and active and conductive and (gradient or density) and current adj collector and activated adj carbon	USPAT; US-PGPUB	2002/12/30 17:57
6	3	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and active and conductive and (gradient or density) and current adj collector and activated adj carbon and (meso\$1phase or meso adj phase)	USPAT; US-PGPUB	2002/12/30 17:58
7	26	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and active and conductive and (gradient or density) and activated adj carbon	USPAT; US-PGPUB	2002/12/30 17:58
8	0	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and active and conductive and (gradient or density) and current adj collector and activated adj carbon and (meso\$1phase or meso adj phase)	EPO; JPO; DERWENT	2002/12/30 18:01
9	0	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and active and conductive and (gradient or density) and current adj collector and activated adj carbon	EPO; JPO; DERWENT	2002/12/30 18:00
10	0	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and active and conductive and (gradient or density) and activated adj carbon	EPO; JPO; DERWENT	2002/12/30 18:00
11	2	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and active and conductive and activated adj carbon	EPO; JPO; DERWENT	2002/12/30 18:01
12	2	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and activated adj carbon and (meso\$1phase or meso adj phase)	EPO; JPO; DERWENT	2002/12/30 18:02
13	1	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and activated adj carbon and (meso\$1phase or meso adj phase) and (gradient or density)	EPO; JPO; DERWENT	2002/12/30 18:03
14	34	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and activated adj carbon and (gradient or density)	EPO; JPO; DERWENT	2002/12/30 18:04
15	127	electrode and electrical adj (double adj layer or double\$1layer) adj capacitor and activated adj carbon	EPO; JPO; DERWENT	2002/12/30 18:04

DERWENT-ACC-NO: 2002-047020

DERWENT-WEEK: 200206

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TITLE: Electric double layer capacitor and its manufacturing method

INVENTOR: AHN, H S; JUNG, Y H ; KIM, Y H

PATENT-ASSIGNEE: AHN, H S JUNG, Y H KIM, Y H NESS CO LTD[NESSN]

PRIORITY-DATA: 1999KR-0043892 (October 11, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
KR 2001036764 A	<u>May 7, 2001</u>	N/A	001	H01G 009/00

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
KR2001036764A	N/A	1999KR-0043892	October 11, 1999

INT-CL (IPC): H01G009/00

ABSTRACTED-PUB-NO: KR2001036764A

BASIC-ABSTRACT:

NOVELTY - An electric double layer capacitor and its manufacturing method are provided to decrease the internal resistance and to improve the physical characteristics of the electrode by doubling the layer by using the two binders.

DETAILED DESCRIPTION - The electric double layer capacitor comprises electrode active material having active carbon(21,22) and conductive binder(24), mixed binder(26) for binding the electrode active material, and an electrode where the bound electrode active material is coated. The mixed binder is polytetrafluoroethylene and the water-soluble binder is cellulose or polysaccharide. The first group of the active carbon has an average diameter of about 50 - 80 mu m and the specific surface area of about 1500 - 300 m²/g and the bulk density of about 0.25 - 0.35 g/ml. The second group of the active carbon has an average diameter of about 7 - 13 mu m and the specific surface area of about 1500 - 300 m²/g and the bulk density of about 0.3 - 0.4 g/ml.

CHOSEN-DRAWING: Dwg.1/10

TITLE-TERMS: ELECTRIC DOUBLE LAYER CAPACITOR MANUFACTURE METHOD

DERWENT-CLASS: A85 L03 V01

CPI-CODES: A03-A01; A03-A05; A04-E08; A12-E07B; L03-B03A;

EPI-CODES: V01-B01D; V01-B01G;

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2002-013050

DERWENT- 2001-218374**ACC-NO:****DERWENT-** 200246**WEEK:****COPYRIGHT 1999 DERWENT INFORMATION LTD****TITLE:** Manufacture of active carbon for electrical double layer capacitor electrode by crushing mesophase pitch, insolubilizing, carbonizing, alkali activating and crushing**INVENTOR:** FUJINO, T ; HAGA, T ; KAWABUCHI, Y ; MAEDA, T ; NISHIMURA, S ; NOGUCHI, M ; OKI, N ; OYAMA, S ; SATO, K**PATENT-ASSIGNEE:** HONDA MOTOR CO LTD[HOND] , PETOCA LTD[PETON] , KURARAY CHEM CO LTD[KURS] , HONDA GIKEN KOGYO KK[HOND]**PRIORITY-DATA:** 2000JP-0234674 (August 2, 2000) , 1999JP-0226719 (August 10, 1999) , 2000JP-0024815 (January 28, 2000) , 2000JP-0195922 (June 29, 2000)**PATENT-FAMILY:**

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200113390 A1	February 22, 2001	J	053	H01G 009/058
JP 2002134369 A	May 10, 2002	N/A	008	H01G 009/058
JP 2001052972 A	February 23, 2001	N/A	006	H01G 009/058
JP 2001210564 A	August 3, 2001	N/A	005	H01G 009/058
JP 2002015958 A	January 18, 2002	N/A	006	H01G 009/058

DESIGNATED-STATES: DE US**APPLICATION-DATA:**

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
WO 200113390A1	N/A	2000WO-JP05340	August 9, 2000
JP2002134369A	N/A	2001JP-0234941	August 2, 2001
JP2001052972A	N/A	1999JP-0226719	August 10, 1999
JP2001210564A	N/A	2000JP-0024815	January 28, 2000
JP2002015958A	N/A	2000JP-0195922	June 29, 2000

INT-CL (IPC): C01B031/08, C01B031/12 , C10C003/04 , C10C003/14 , H01G009/058**ABSTRACTED-PUB-NO:** WO 200113390A**BASIC-ABSTRACT:**

NOVELTY - Method of manufacturing active carbon for electrical double layer capacitor electrode involves crushing mesophase pitch, insolubilizing the powder, carbonizing the powder, alkali activating the produced carbon powder and crushing the alkali-activated carbon.

DETAILED DESCRIPTION - Manufacture of active carbon for an electrical double layer capacitor electrode comprises:

- (i) obtaining a ground powder by crushing massive mesophase pitch;
- (ii) insolubilizing the powder in an air stream at 300-450 deg. C;
- (iii) obtaining carbon powder by carbonizing the powder in an inert gas stream at 600-900 deg. C;
- (iv) obtaining alkali-activated carbon by alkali activating the carbon powder in an inert gas atmosphere at 500-1000 deg. C and post treating; and
- (v) crushing the alkali-activated carbon.

USE - The method is used for the manufacture of active carbon for an electrical double layer capacitor electrode.

ADVANTAGE - The activated carbon can increase electrode density.

DESCRIPTION OF DRAWING(S) - The diagram shows a graph of electrode density (g/cc) against mean particle size of potassium hydroxide (KOH) activated carbon (mu m). (Drawing includes non-English language text).

CHosen-DRAWING: Dwg.5/20

TITLE-TERMS: MANUFACTURE ACTIVE CARBON ELECTRIC DOUBLE LAYER CAPACITOR ELECTRODE CRUSH MESOPHASE PITCH INSOLUBLE CARBONISE ALKALI ACTIVATE CRUSH

DERWENT-CLASS: E36 L03 V01

CPI-CODES: E31-N03; L03-B03A;

EPI-CODES: V01-B01A; V01-B01D; V01-B01G1;

CHEMICAL-CODES: Chemical Indexing M3 *01* Fragmentation Code C106 C810 M411 M720 M904 M905 M910 N480 N514 N515 Q454 Specfic Compounds 01669K 01669P 05085K 05085P Registry Numbers 1669P 1669U

Chemical Indexing M3 *02* Fragmentation Code A111 A940 C101 C108 C550 C730 C801 C802 C804 C805 C807 M411 M730 M904 M905 M910 Specfic Compounds 01514K 01514S Registry Numbers 1514S 1514U

Chemical Indexing M3 *03* Fragmentation Code A119 A940 C101 C108 C550 C730 C801 C802 C804 C805 C807 M411 M730 M904 M905 M910 Specfic Compounds 01512K 01512S Registry Numbers 1512S 1512U

UNLINKED-DERWENT-REGISTRY-NUMBERS: ; 1512S ; 1512U ; 1514S ; 1514U ; 1669P ; 1669U

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2001-065205

Non-CPI Secondary Accession Numbers: N2001-155662